THE RECOVERY KERNEL

Global Nightlife Health Initiative

THE WORLD IS YOUR GENOME

A Global Pharmacogenomic Map

Where You Come From Determines How Substances Find You

DNA FIRST. PARTY SECOND. KNOW YOUR CODE.

Recovery Kernel editions mapped to population genetics:

Berlin · Amsterdam · Netherlands · Paris · London · Ibiza · Warsaw · Belgrade · Tbilisi · Tel Aviv · Miami · Bogotá · Medellín · Albania · Russia · Global

Compendium anchors: 'Mediterranean, Hispanic, or Italian descent — MTHFR more common in these populations.' 'East Asian descent — Higher poor metabolizer rates.' 'North African or Middle Eastern descent — Higher ultra-rapid rates.'

Every edition is a scientific statement. Every tagline is a pharmacological signal. This document maps both.

The Genius: Why Geography IS Pharmacology

THE CENTURION — Your DNA Is Your Address. Your Address Determines Your Risk.

Every garment in the Recovery Kernel global collection is a precise scientific statement dressed as fashion. The city name is not marketing. It is a pharmacological claim: the population most likely to wear this shirt carries specific genetic variants that determine how the substances most prevalent in that city's drug supply will interact with their biology.

This is not speculation. It is population genetics — the same discipline that explains why sickle cell anaemia clusters in malaria-endemic regions (evolutionary protection), why ALDH2 alcohol intolerance is almost exclusively East Asian (founder effect), and why codeine kills some Ethiopian patients while doing nothing for others (CYP2D6 ultra-rapid metabolism at 29% frequency).

The compendium states it directly: 'Mediterranean, Hispanic, or Italian descent — MTHFR more common in these populations.' 'East Asian descent — Higher poor metabolizer rates.' 'North African or Middle Eastern descent — Higher ultra-rapid rates.' These are not footnotes. They are the scientific architecture the entire global campaign is built on.

The genius of the t-shirt collection is that it takes this population genetics data and places it precisely at the intersection where it is most consequential: the nightlife context where genetic predisposition meets substance exposure at the moment of maximum vulnerability. The science is never more necessary than the moment the beat drops.

What Population Genetics Tells Us

Genes have frequencies — not everyone carries a variant, and the frequency varies dramatically by ancestry. The key pharmacogenomic variants for nightlife harm reduction are not uniformly distributed across the human population. They cluster by:

- Founder effects: a small ancestral population that expanded rapidly carried specific variants at high frequency into descendants
- Evolutionary selection: some variants were protective against regional diseases (malaria, folate-dependent parasites) and became common in those regions
- Geographic isolation: populations separated by mountains, oceans, or deserts maintained distinct genetic profiles for millennia
- Migration patterns: diaspora populations carry their original genetic frequencies into new environments where the drug supply may be calibrated to different genomic profiles

The festival and club circuit is one of the most genomically diverse environments on earth — people from every ancestral background, in the same venue, with the same drug supply. The supply is not genomically calibrated. The genome is.

PART I — THE WORLD ENCOUNTER MAP

Where You Will Encounter These Genetics

Each regional profile below names: the primary pharmacogenomic variants prevalent in that population, the approximate carrier frequency, what that means when those variants meet the local drug supply, and which Recovery Kernel edition speaks directly to that population.

Region 1 — East Asia

China · Japan · Korea · Taiwan · Hong Kong · Mongolia

Primary variant	Population frequency	Nightlife pharmacological consequence
ALDH2 *2 (alcohol flush / acetaldehyde toxicity)	30–50% carrier rate	The world's most geographically concentrated major pharmacogenomic variant. ALDH2 *2 carriers cannot clear acetaldehyde — the toxic metabolite of alcohol — efficiently. Any alcohol produces rapid acetaldehyde accumulation: facial flushing, nausea, tachycardia, hypotension. Homozygous *2/*2 (~5–8% of East Asians): near-zero clearance — severe reaction at any dose. The acetaldehyde itself is a Group 1 carcinogen. This is not a tolerance difference — it is a biochemical exposure to a carcinogen at every drink.
CYP2D6 Poor Metabolizer	0–2% (very low)	East Asian populations have the lowest CYP2D6 poor metabolizer rate of any major population group. They are relatively protected from this specific drug metabolism risk — but this also means MDMA's serotonergic effects are less attenuated by rapid clearance.
OPRM1 A118G — G allele	30–50% G allele	This is the inverse vulnerability for

(reduced mu-opioid receptor binding)	frequency	opioids: East Asian populations need higher opioid doses for equivalent pain relief, but the opioid receptor's reduced baseline activation from natural endorphins may contribute to lower natural reward satisfaction. The specific vulnerability in the nightlife context: fentanyl-contaminated supply in any drug combines with a population where opioid pharmacokinetics are dramatically different from European norms.
SLC6A4 Short/Short (5-HTTLPR — low serotonin transporter expression)	70–80% short/short (!!! highest globally)	The most critical and most overlooked East Asian nightlife pharmacogenomic fact. 70–80% of East Asians carry the low-expression serotonin transporter genotype vs 40–50% of Europeans. MDMA forces massive serotonin release from exactly this transporter. The serotonin depletion after MDMA use is proportionally more severe in East Asian users — and the neurological consequences of the serotonin flooding are experienced in a system with less baseline buffering capacity.
CYP2C19 Poor Metabolizer	12–23%	Much higher than European rate (~2–5%). CYP2C19 metabolizes benzodiazepines (diazepam, clonazepam), several opioids, and other sedating compounds. East Asian poor CYP2C19 metabolizers experience significantly amplified effects from benzodiazepines — relevant in any context where benzos are used for comedown management or anxiety.

Recovery Kernel encounter note: East Asian tourists and residents at Ibiza, Amsterdam, Berlin, Miami represent a population where ALDH2 alcohol risk + SLC6A4 MDMA serotonin depletion risk + OPRM1 opioid receptor differences create a specific triple vulnerability profile. No Recovery Kernel city edition is explicitly East Asia-targeted yet — this is the most significant gap in the current collection's geographic coverage.

Region 2 — Southeast Asia

Thailand · Vietnam · Indonesia · Philippines · Malaysia · Cambodia · Myanmar

Primary variant	Population frequency	Nightlife consequence
ALDH2 *2 — partial East Asian overlap	15–40% (varies by ethnic sub-group)	Southeast Asian populations have intermediate ALDH2 *2 rates — lower than Japanese/Korean/Chinese Han but significant in Vietnamese, Taiwanese, and some Filipino populations. The alcohol consequence is present but variable by specific ancestry.
G6PD Deficiency	5–15%	Historically malaria-endemic regions maintain high G6PD deficiency rates. G6PD-deficient individuals are at specific risk from poppers/alkyl nitrites (methemoglobinemia), primaquine antimalarials, and several other compounds. At Southeast Asian music festivals where poppers use occurs: G6PD deficiency is the invisible risk.
MTHFR C677T — intermediate rates	6–12%	Southeast Asian populations carry intermediate MTHFR rates — higher than sub-Saharan African populations, lower than Mediterranean and Latin American. MTHFR + methamphetamine (regionally prevalent in East/Southeast Asia — 'ya ba' tablets) creates the dopamine synthesis deficit that drives the stimulant need.

Region 3 — South Asia

India · Pakistan · Bangladesh · Sri Lanka · Nepal

Primary variant	Population frequency	Nightlife consequence

CYP2C19 Poor Metabolizer — GLOBALLY HIGHEST	20–30% (!!! highest in world)	Indian and Pakistani populations have among the highest CYP2C19 poor metabolizer rates globally. CYP2C19 is the primary metabolism pathway for diazepam and many benzodiazepines. A South Asian person receiving standard diazepam dosing may experience 3–5x the expected plasma concentration. In a harm reduction context: GHB comedown benzodiazepine use in a South Asian user is not the same pharmacological event as in a European user.
MTHFR C677T — significant	10–18%	South Asian populations carry significant MTHFR C677T rates, with regional variation. The combination of MTHFR impairment + the high MDMA use documented in South Asian diaspora UK festival culture creates the serotonin synthesis deficit that makes MDMA post-use recovery more prolonged.
G6PD Deficiency	5–20% (malaria-endemic regions especially)	Northern India and Pakistan carry significant G6PD deficiency rates from malaria-endemic zones. G6PD-deficient individuals exposed to poppers/alkyl nitrites or specific medications face methemoglobinemia risk.

Region 4 — Middle East and North Africa

Saudi Arabia · UAE · Lebanon · Israel · Egypt · Morocco · Algeria · Tunisia · Jordan

The compendium explicitly names: 'North African or Middle Eastern descent — Higher ultra-rapid rates' for CYP2D6. This is the most clinically consequential CYP450 geographic finding for the specific harm reduction context this campaign addresses.

Primary variant	Population frequency	Nightlife consequence
CYP2D6 Ultra-Rapid Metabolizer — THE	Ethiopian: 26–29% (!!! highest globally)	CYP2D6 ultra-rapid metabolizers convert prodrugs to active

DEFINING MENA FINDING	Saudi/Arab: 10–15% North African: 8–12%	metabolites extremely fast. For codeine: extremely rapid conversion to morphine → opioid toxicity. For MDMA: ultra-rapid metabolism means the drug clears faster — driving more frequent redosing to maintain effect. The redosing pattern that produces MDMA neurotoxicity is pharmacokinetically driven in ultra-rapid metabolizers. The Tel Aviv edition's Hebrew/Arabic reach directly encounters this population.
MTHFR C677T — significant rates	10–16%	Levantine and North African populations carry significant MTHFR C677T rates. The Tel Aviv Jewish population has specific Ashkenazi and Sephardic sub-populations with different MTHFR rates. MTHFR + the chemsex context documented in Tel Aviv = amplified methylation demands from multi-substance use in a population with significant methylation impairment.
G6PD Deficiency	5–15%	Mediterranean and Middle Eastern populations carry significant G6PD deficiency from historically malaria-endemic zones. G6PD + poppers (common in the Tel Aviv/MSM chemsex context) = methemoglobinemia risk documented in the inhalants guide. The G6PD testing recommendation in the poppers guide is most immediately relevant to this population.
ALDH2 — negligible	<1%	Unlike East Asian populations, Middle Eastern populations have essentially no ALDH2 *2 prevalence. Alcohol metabolism is not the primary genetic vulnerability for this population — but Islamic cultural restrictions on alcohol mean when nightlife substance use occurs, it tends toward non-alcohol drugs where other genetic vulnerabilities apply.

Tel Aviv edition match: The Mediterranean Signal / 'Clear Signal. Clear Night.' edition addresses a population with CYP2D6 ultra-rapid rates (faster MDMA clearance → redosing → neurotoxicity) + G6PD risk (poppers + MSM chemsex context) + MTHFR rates (methylation impairment in a high-substance-demand setting). The EKG cardiac monitor graphic is the correct image — the chemsex cardiac risk is real and genomically amplified.

Region 5 — Sub-Saharan and East Africa

Ethiopia · Kenya · Nigeria · Ghana · South Africa · Tanzania · Senegal · Cameroon

Primary variant	Population frequency	Nightlife consequence
CYP2D6 Ultra-Rapid Metabolizer — ETHIOPIAN PEAK	Ethiopian: 26–29% (!!! highest recorded globally) East African overall: 15–22%	The Ethiopian population has the highest documented CYP2D6 ultra-rapid metabolizer rate in the world. The consequences in a harm reduction context: codeine toxicity through excessive morphine production; MDMA rapid clearance driving redosing; tramadol ultra-rapid conversion to active metabolites exceeding safe exposure. East African diaspora communities in European cities (London, Amsterdam, Berlin, Paris) carry these genetics into the primary Recovery Kernel city markets.
CYP2B6 *6 Poor Metabolizer — THE AFRICAN DISSOCIATIVE LOGJAM	30–35% carry at least one *6 allele (some West African populations: up to 50% carrier)	The highest CYP2B6 *6 carrier rate of any population is in sub-Saharan Africa. The compendium names CYP2B6 as the 'Dissociative Logjam Risk' for ketamine and PCP. At African or diaspora-community events where ketamine is present: 30–35% of attendees may be unable to clear it efficiently — experiencing prolonged, more intense dissociation and higher psychosis risk than their dosing would predict in a European metabolizer.
G6PD Deficiency — GLOBALLY HIGHEST RATES	10–25% in malaria-endemic sub-regions	Sub-Saharan African populations carry the highest G6PD deficiency rates globally — a direct evolutionary response to malaria

		selection pressure. G6PD deficiency + poppers/alkyl nitrites = methemoglobinemia. G6PD deficiency is common enough in West African descent populations (including ~10% of African American males) that the poppers warning is population-critical for this demographic.
MTHFR C677T — LOWEST GLOBALLY	1–3% (!! lowest of all major population groups)	Sub-Saharan African populations have the lowest MTHFR C677T homozygous rates in the world — thought to reflect evolutionary protection, since low folate utilisation was advantageous in folate-parasitizing malaria environments. This means the MTHFR-first prevention intervention is least urgent for this population — but the CYP2B6 and G6PD interventions are most urgent.

Region 6 — Mediterranean and Southern Europe

Italy · Greece · Spain · Portugal · Croatia · Malta · Cyprus · France (Southern) · Turkey

The compendium's anchor statement: 'Mediterranean, Hispanic, or Italian descent — MTHFR more common in these populations.' This is the primary Recovery Kernel population genetics finding for southern European festival markets.

Primary variant	Population frequency	Nightlife consequence
MTHFR C677T Homozygous — THE MEDITERRANEAN METHYLATION FAULT LINE	Italian: 12–20% homozygous Spanish/Portuguese: 10–16% Greek: 10–14%	The highest MTHFR C677T homozygous rates in the European continent cluster in the Mediterranean populations. 1 in 6 Italians carries two copies of the variant — operating at 30–40% methylation capacity. The nightlife consequence: every substance that floods the dopamine and serotonin systems is doing so in a brain that cannot efficiently synthesise the neurotransmitters needed for recovery. The comedown is worse. The recovery is longer. The gap that

		the next use fills is deeper. Ibiza is a Mediterranean festival. The Ibiza edition's 'Before the Myths' directly addresses a population where myth-making excess is backed by a genomic methylation deficit.
G6PD Deficiency — Mediterranean historical rates	5–15%	Sardinian and Sicilian populations in particular carry high G6PD deficiency rates from historically malaria-endemic Mediterranean zones. Greek and Turkish populations similarly. G6PD deficiency + poppers in the European club circuit = the methemoglobinemia risk that the inhalants guide names as the primary Mediterranean G6PD encounter.
CYP2D6 Poor Metabolizer — intermediate	5–7%	Mediterranean populations have intermediate CYP2D6 poor metabolizer rates — lower than Northern European populations but significant. The MDMA metabolism slower-clearance risk applies to 1 in 14–20 Mediterranean festival attendees.

Ibiza edition match: 'Before the Myths. Know Your Code.' — Ibiza is where Southern European (high MTHFR rates), Northern European (high CYP2D6 poor metabolizer rates), and East Asian tourists (high ALDH2 and SLC6A4 rates) encounter the same drug supply simultaneously. The Ibiza edition's circular island design is the correct icon for the genomic mixing bowl the island represents.

Region 7 — Northern and Western Europe

UK · Germany · Netherlands · Scandinavia · Belgium · Austria · Switzerland · France (Northern)

The compendium names 'East Asian descent — Higher poor metabolizer rates' as the primary CYP2D6 population finding. By inversion: Northern European populations carry the HIGHEST documented CYP2D6 poor metabolizer rates of any major population group.

Primary variant	Population	Nightlife consequence

	frequency	
CYP2D6 Poor Metabolizer — NORTHERN EUROPEAN PEAK	7–10% (!!! highest of any major population)	Northern European populations have the highest CYP2D6 poor metabolizer rate of any major ancestral group in the world. CYP2D6 is the primary metabolism enzyme for MDMA. A CYP2D6 poor metabolizer attending Berghain, Fabric, or ADE is experiencing MDMA at dramatically higher plasma concentrations than a normal metabolizer at the same dose — increasing serotonin syndrome risk, cardiac toxicity, and hyperthermia risk proportionally. 1 in 10–14 people at a UK or German event are poor metabolizers. The 'No shame. No guessing.' Berlin tagline speaks to exactly this invisible risk.
MTHFR A1298C — Northern European predominance	30–40% heterozygous; 6–12% homozygous	The A1298C variant (as opposed to C677T, which is more Mediterranean) is relatively more prevalent in Northern European populations. Homozygous A1298C produces less severe methylation impairment than homozygous C677T but is still clinically significant — particularly in combination with the CYP2D6 poor metabolizer profile that Northern Europeans also carry disproportionately.
CYP2B6 *6 — intermediate rates	~15% carrier	Northern European populations carry intermediate CYP2B6 *6 rates — lower than African populations but significant. Ketamine uropathy (bladder damage from chronic ketamine) is documented specifically as a UK/Northern European clinical presentation — reflecting both the CYP2B6 variation and the specific ketamine culture of UK club venues. The London 'Underground Genome' edition directly addresses this.

Berlin/London/Netherlands edition match: The three Northern European editions address the population with the highest CYP2D6 poor metabolizer rate in

the world — encountering MDMA and ketamine in the world's most intensive multi-day club culture. 'No shame. No guessing.' (Berlin) + 'Underground Genome' (London) + 'Know your code before the night opens' (Netherlands) are three precision messages to one pharmacogenomic reality.

Region 8 — Eastern Europe

Poland · Russia · Ukraine · Serbia · Georgia · Albania · Bulgaria · Romania · Czech Republic

Primary variant	Population frequency	Nightlife consequence
ALDH2 — absent; ADH1B high-activity — distinct alcohol profile	ADH1B *2: 5–20% in some Eastern European populations	Eastern European populations lack ALDH2 *2 (the East Asian alcohol flush gene) but have distinct ADH1B variants that affect acetaldehyde production rate. Some Eastern European populations have high-activity ADH1B variants that produce acetaldehyde rapidly — contributing to the specific alcohol tolerance patterns documented in Eastern European populations. The overall result: different alcohol metabolism kinetics than both Western European and East Asian patterns.
MTHFR C677T — significant in Slavic populations	8–14% homozygous	Eastern European populations carry significant MTHFR C677T rates, somewhat lower than Mediterranean populations but well above sub-Saharan African rates. Combined with the specific synthetic cathinone (bath salts) prevalence in Eastern European drug markets: MTHFR impairment + synthetic cathinone dopamine flooding = the methylation-dopamine double burden.
CYP2B6 *6 — intermediate + specific NPS market	~12–18%	Eastern European countries have significant synthetic cathinone (NPS) prevalence — particularly in Russia and surrounding markets. CYP2B6 metabolizes several cathinone compounds. Poor metabolizers in populations where synthetic cathinones are prevalent face extended accumulation of

		compounds that their CYP2B6 cannot clear. The Warsaw 'Eastern Signal' and Belgrade 'Balkan Frequency' editions land directly in this population.
Unique to Georgia: CYP2D6 intermediate metabolizer enrichment	~25–30% intermediate	Georgian and Caucasian populations show enrichment of CYP2D6 intermediate metabolizer genotypes — producing variable but generally slower MDMA clearance than the ultra-rapid East African profile. The Bassiani/Tbilisi scene + CYP2D6 intermediate = moderate MDMA accumulation risk. 'The body remembers' — this is the genomic memory the Tbilisi edition is referencing.

Warsaw/Belgrade/Albania/Russia/Tbilisi edition match: Five Eastern European Recovery Kernel editions address a population whose specific profile is: significant MTHFR burden, CYP2B6 intermediate risk, NPS/synthetic cathinone market exposure, and the specific police and legal enforcement contexts (Tbilisi raids, Russian drug law severity) that make harm reduction messaging most urgent precisely where it is most suppressed.

Region 9 — Latin America

Mexico · Colombia · Peru · Brazil · Argentina · Chile · Venezuela · Ecuador · Bolivia

The compendium explicitly names 'Hispanic' descent as a population with higher MTHFR prevalence. This is not a casual observation — Latin American populations carry the highest MTHFR C677T homozygous rates in the world, driven by the high frequency of the variant in pre-Columbian Indigenous American populations.

Primary variant	Population frequency	Nightlife consequence
MTHFR C677T Homozygous — GLOBALLY HIGHEST RATES	Mexican Indigenous: 15–25% (!!! highest documented) Colombian mestizo: 15–22% Latin American average: 10–18%	This is the single most important geographic pharmacogenomic finding for the Bogotá and Medellín editions. Latin American populations — particularly those with high Indigenous American ancestry — carry the highest MTHFR C677T homozygous rates in

		the world. The consequence in the Bogotá context specifically: MTHFR homozygous (impaired methylation, reduced dopamine and serotonin synthesis) + cocaine (massive dopamine flooding) + 2,600m altitude (altered CYP450 function, reduced oxygen saturation, amplified cardiovascular stimulant effects) = three simultaneous biological risk amplifiers in one of the world's largest cocaine supply cities.
Altitude pharmacokinetics (geographic, not genetic — but population-specific)	Bogotá: 2,600m. Medellín: 1,495m. Quito: 2,850m. Bolivia (La Paz): 3,640m	High altitude is not genetic, but its effects are population-specific because these populations live at altitude and take substances calibrated to sea-level pharmacokinetics. Altitude reduces blood oxygen saturation (~90% vs ~98% at sea level), activates the sympathetic nervous system chronically, alters hepatic blood flow (changing CYP450 enzyme function), and amplifies cardiovascular responses to stimulants. A cocaine dose that is managed at sea level produces disproportionately higher cardiac stress at 2,600m. The Bogotá 'High Altitude. High Frequency.' tagline is the most pharmacologically precise tagline in the entire global collection.
CYP2D6 — intermediate rates with Indigenous variation	3–8%	Latin American populations carry intermediate CYP2D6 poor metabolizer rates with significant sub-population variation depending on Indigenous vs European vs African ancestry proportion. In populations with high Indigenous American ancestry (central Mexico, Andean communities), lower CYP2D6 poor metabolizer rates are documented. In populations with more European ancestry: rates approach the 5–7% European baseline.
ADH1B and ALDH2 — Indigenous American patterns	Complex — ADH1B *2 varies	Some Indigenous American populations have high rates of the ADH1B *2 fast metabolizer variant

		— producing acetaldehyde rapidly from alcohol. This contributes to the specific alcohol sensitivity patterns documented in some Indigenous Latin American communities. The pattern is distinct from the ALDH2 *2 Asian pattern but produces a superficially similar flushing response through different biochemistry.

Bogotá/Medellín edition match: The altitude taglines are the Recovery Kernel's most scientifically layered messages. They operate simultaneously at three levels: the geographic reality of altitude pharmacokinetics, the highest MTHFR rates in the world in the local population, and the most abundant cocaine supply on earth. The altitude wave graphic in the Bogotá design is encoding topographic, genomic, and pharmacological information in a single visual. The genius of the global collection is nowhere more evident than in these two Latin American editions.

Region 10 — North America

USA · Canada — focusing on the Miami festival demographic

Primary variant	Population frequency	Nightlife consequence
CYP2D6 — diverse by ancestry	African American: 5–8% poor, 3–5% ultra-rapid European American: 7–10% poor Hispanic: 3–6% poor	The Miami Club Space demographic is one of the most genetically diverse in the Recovery Kernel city collection — mixing African American, Hispanic/Latino, European American, Caribbean, and recent immigrant populations. The CYP2D6 spectrum is therefore the broadest of any single city in the collection: some attendees are CYP2D6 poor metabolizers (MDMA accumulation risk) and others are ultra-rapid metabolizers (codeine toxicity, MDMA rapid clearance/redosing driver) — in the same room, with the same pill.
MTHFR C677T — Latino Miami demographic	Hispanic American: 10–18%	Miami's large Cuban American, Colombian American, and broader Latin American diaspora carries the high MTHFR C677T rates of their ancestral populations. The 'Sunrise

		Protocol' edition addresses a population whose Latino demographic carries very high MTHFR rates (methylation deficit) encountering MDMA at sunrise afterparties where multiple sequential doses are common.
CYP2B6 *6 — African American population	~30–35% carrier (same as sub-Saharan African source populations)	African American attendees at Miami events retain the CYP2B6 *6 high-carrier rate from West African source populations. If ketamine is present in the Miami drug supply (increasingly documented), the dissociative logjam risk applies at the same rate as in sub-Saharan African populations — 30–35% of African American attendees are extended-clearance ketamine metabolizers.

PART II — THE RECOVERY KERNEL CITY EDITION MATRIX

Each Edition Mapped to Its Primary Genomic Population Profile

City edition	Tagline signal	Primary gene(s)	Why this population	Primary drug-gene risk encounter
GLOBAL	Get your DNA checked before you party	All — MTHFR, CYP2D6, ALDH2, GABRA2	Every population. The master signal.	Unknown compound + unknown genome = unknown risk at every event worldwide
NETHERLANDS	Know your code before the night opens	CYP2D6, MTHFR A1298C	Northern European 7–10% CYP2D6 poor metabolizer peak. Most advanced harm reduction infrastructure — the message steps beyond pill testing to genome testing.	MDMA accumulation in 1/10 attendees. 'The night opens' = the pharmacological window of vulnerability at onset. Know your metabolism before the pill takes effect.
GERMANY	Precision before excess	CYP2D6, CYP2B6, MTHFR A1298C	German engineering precision applied to the highest-quality nightlife pharmacological exposure in the world. Berghain multi-day events + Northern European CYP2D6 rates + ketamine use = compound dissociative logjam risk.	MDMA accumulation (CYP2D6) + Ketamine logjam (CYP2B6) in a 72-hour event. The precision tagline names the engineering solution: know before you enter.
RUSSIA	Code before chaos / ДНК сначала. Вечеринка потом.	CYP2B6, synthetic cathinone metabolism	Eastern European CYP2B6 intermediate rates + chaotic NPS supply chain. The Russian translation signals local accessibility in	Synthetic cathinone accumulation in CYP2B6 poor/intermediate metabolizers + unknown compound supply = the

			a market with severe drug law enforcement.	specific chaos the tagline names.
MIAMI	Before the afters. Before the sunrise.	CYP2D6 (diverse), MTHFR C677T (Latino demographic), CYP2B6 (African American)	Most genomically diverse city edition. Latino MTHFR rates, African American CYP2B6 rates, European CYP2D6 rates. All three simultaneously at Club Space.	MDMA redosing at sunrise afterparties (CYP2D6 poor: accumulation; ultra-rapid: drive to redose) + methylation deficit in Latino attendees (MTHFR) + ketamine exposure in African American attendees (CYP2B6)
BERLIN	No shame. No guessing. Know your code.	CYP2D6, CYP2B6, MTHFR A1298C	Same Northern European genomic profile as Netherlands but in the world's most intensive multi-day dark room context. 'No shame' targets the cultural barrier to harm reduction disclosure in the Berghain acceptance culture.	72-hour events + MDMA/ketamine/GHB combination in a population with the highest CYP2D6 poor metabolizer rate. The unknown compound problem in dark room supply chains amplified by poor metabolizer accumulation risk.
TBILISI	The body remembers. The night should know.	CYP2D6 intermediate enrichment, MTHFR C677T	Caucasian/Georgian populations with CYP2D6 intermediate enrichment + Bassiani's police raid history creating a community that has already experienced the biological cost. The body that has already paid is the specific addressee.	MDMA in a population where intermediate CYP2D6 produces variable but generally slower clearance + the specific legal/enforcement context that makes the harm reduction message most urgent where it is most suppressed.
AMSTERDAM	Know your code before the beat drops	CYP2D6, MTHFR A1298C	ADE (Amsterdam Dance Event) context. Most harm-reduction-literate nightlife community in the world — the message advances	Same Northern European CYP2D6 exposure as Germany/Netherlands but with 'the beat drops' naming the specific onset

			the conversation: beyond pill testing, to genome testing.	moment as the pharmacological flashpoint.
BOGOTÁ	High altitude. High frequency. Know your code.	MTHFR C677T (HIGHEST GLOBALLY), altitude pharmacokinetics	Colombian mestizo populations at 2,600m. Highest MTHFR homozygous rates in the world combined with altitude-altered CYP450 function and abundant cocaine supply. The most pharmacologically precise tagline in the collection.	MTHFR impairment (methylation deficit) + altitude (reduced O_2 saturation, altered hepatic blood flow, amplified cardiovascular stimulant response) + cocaine (massive dopamine flooding) = triple simultaneous biological burden
WARSAW	The future of nightlife is informed.	CYP2B6, MTHFR C677T, Eastern European NPS market	Polish club scene generational transition. Younger generation aligned with Western European harm reduction norms. The future tagline names the cultural trajectory.	Synthetic cathinone NPS market exposure in a population with intermediate CYP2B6 rates = extended clearance of unknown compounds. 'The future is informed' = genomic knowledge is the next generation's harm reduction tool.
BELGRADE	Before the night becomes a story.	MTHFR C677T, Eastern European NPS/MDMA mix	Belgrade's specific cultural context where the night's events are social currency. Serbian/Balkan populations carry significant MTHFR rates + the Danube/EXIT festival multi-day exposure.	MDMA + NPS in a methylation-impaired population where the story being told post-event may include pharmacological consequences that genomic knowledge would have changed.
ALBANIA	Protect the body. Respect the night.	MTHFR C677T (Mediterranean-range), CYP2D6	Albanian national identity (eagle) + honour-system value framework applied to harm reduction. Albanian diaspora in Italy, Germany,	Mediterranean MTHFR rates (10–15%) in the core population + diaspora encounter with Northern European drug supplies (MDMA,

			Netherlands carries Albanian genomic profile into European festival circuits.	ketamine) whose CYP2D6 pharmacokinetics differ from Mediterranean baselines.
LONDON	Underground Genome (tube map graphic)	CYP2B6, CYP2D6, MTHFR A1298C	The Underground = both London's transit infrastructure and its club scene. Ketamine uropathy is documented as a UK-specific clinical emergency. CYP2B6 dissociative logjam in the Northern European population + specific ketamine culture = the precise indication the Underground Genome edition names.	Ketamine bladder damage (CYP2B6-mediated slow clearance + sustained high plasma ketamine levels) + MDMA accumulation (CYP2D6 poor in 1/10 UK attendees) = the two primary UK clubbing harm reduction targets
PARIS	ADN d'abord. La fête ensuite.	MTHFR C677T (Mediterranean + Atlantic French), CYP2D6	French text signals cultural respect. France has among the highest cocaine use rates in Europe. ADN (French for DNA) + 'La nuit est meilleure quand elle est informée' is philosophically French — informed is better, precision is cultural.	Cocaine + MTHFR impairment (French populations carry both Mediterranean C677T and Northern A1298C depending on region) = methylation deficit flooded by dopamine from France's primary substance of nightlife choice.
IBIZA	Before the myths. Know your code.	MTHFR C677T (Mediterranean), CYP2D6 (Northern European tourists), ALDH2 (East Asian tourists), SLC6A4 (East Asian)	Ibiza is the genomic mixing bowl of the global collection — the most diverse ancestral mix in a single venue. Mediterranean locals (MTHFR), Northern European tourists (CYP2D6), East Asian tourists (ALDH2 + SLC6A4) + the highest MDMA + cocaine + GHB + ketamine supply	MDMA + heat + dehydration in a population with mixed CYP2D6 rates + MTHFR impairment + ALDH2 alcohol risk + SLC6A4 serotonin transporter sensitivity = the specific hyponatremia/hyperthermia mechanism that makes Ibiza the global harm

			density in the world.	reduction priority site
TEL AVIV	Clear signal. Clear night.	CYP2D6 ultra-rapid (MENA population), G6PD deficiency, MTHFR (Sephardic), chemsex pharmacology	Israeli population = Ashkenazi Jewish, Sephardic Jewish, and Arab Israeli components with distinct genomic profiles. MENA CYP2D6 ultra-rapid rates + G6PD deficiency + MSM chemsex culture + GHB/meth/mephedrone pharmacology = the Mediterranean Signal indication.	CYP2D6 ultra-rapid MDMA clearance driving redosing → neurotoxicity + G6PD deficiency + poppers in MSM chemsex context → methemoglobinemia + MTHFR Sephardic rates + multi-substance chemsex load = the most pharmacogenomically complex single-city indication in the collection
MEDELLÍN	The night moves fast. Know your code first.	MTHFR C677T (HIGHEST GLOBALLY — same as Bogotá), altitude pharmacokinetics (1,495m), cocaine supply	Valle de Aburrá (the actual Medellín valley) at 1,495m. Second highest altitude in the Latin American Recovery Kernel collection. Same MTHFR genomic profile as Bogotá — Colombian mestizo population with very high homozygous rates — with fentanyl contamination now entering the cocaine supply from US market dynamics.	MTHFR impairment + altitude pharmacokinetics (less severe than Bogotá but significant) + fentanyl-contaminated cocaine supply + fast-paced nightlife pattern (the 'night moves fast' tagline) + OPRM1 variation determining fentanyl exposure consequence = the specific Medellín harm reduction moment

PART III — THE FESTIVAL ENCOUNTER SCENARIOS

What Happens When Specific Genomes Meet Specific Drug Supplies

THE CENTURION — The Most Important Scenarios in the Global Collection

Scenario 1 — The East Asian Tourist at Ibiza

The genomic profile they carry	What the Ibiza drug supply meets
ALDH2 *2: 30–50% chance of carrying. Any alcohol combined with MDMA or cocaine produces unmanaged acetaldehyde accumulation — not flush reaction as social inconvenience but carcinogen exposure and hemodynamic instability. SLC6A4 Short/Short: 70–80% probability. MDMA in a system with the lowest serotonin transporter expression density of any major population. The serotonin depletion is proportionally more severe. The Tuesday blues after an Ibiza weekend may last weeks in this genomic profile. OPRM1 G allele: 30–50% probability. Lower mu-opioid receptor activation from natural social endorphins. The oxytocin-MDMA experience that Europeans describe may be qualitatively different — or the person redoses to try to achieve it.	MDMA + alcohol (standard Ibiza combination) is simultaneously: alcohol producing acetaldehyde unmanaged by impaired ALDH2 + MDMA flooding a low-density serotonin transporter system + heat (35°C+ Ibiza summer) accelerating the metabolic burden + inadequate hydration completing the hyponatremia risk matrix. The pill tested by the Netherlands-trained harm reduction team at the venue is not calibrated for the East Asian tourist's genomic profile. It passed the safety test. It did not pass their biochemistry test. 'Before the myths.' The myth of Ibiza as universal — the same substances producing the same effects for everyone in the same venue — is the specific myth the Ibiza edition names.

Scenario 2 — The Colombian Festival Attendee in Berlin

The genomic profile they carry	What Berlin's drug supply meets
MTHFR C677T Homozygous: 15–22% probability (highest in the world). Methylation operating at 30–40% of normal capacity. Every neurotransmitter synthesis pathway is impaired at baseline. CYP2B6 *6: ~3–6% poor metabolizer probability (lower than African population, similar to	Berghain's drug supply: MDMA (CYP2D6 metabolism — less affected for Colombians than for Northern Europeans), ketamine (CYP2B6 — similar risk profile to European population), GHB (GABRA2 — universal), cocaine (available in Berlin at high purity). The methylation demand of a 72-hour

European). The Colombian attendee at Berghain is bringing the world's highest methylation deficit into the world's most intensive multi-substance multi-day club environment.	Berghain event for a MTHFR homozygous Colombian attendee is extraordinary — every substance is flooding systems that cannot synthesise the downstream neurotransmitters needed for recovery. The crash after Berlin for a Colombian attendee may last two to three times longer than for a Northern European. 'No shame. No guessing. Know your code.' — the Colombian tourist at Berghain should know their MTHFR status before they cross that door.

Scenario 3 — The Ethiopian Diaspora Attendee at ADE (Amsterdam)

The genomic profile they carry	What ADE's drug supply meets
CYP2D6 Ultra-Rapid Metabolizer: 26–29% probability — the highest documented rate of any population. MDMA is cleared from the bloodstream faster than in a normal metabolizer. The peak effect is shorter. The pharmacokinetic drive to redose is real — not psychological weakness, but the rapid clearance of the compound from the receptor. CYP2B6 *6 high carrier rate: 30–35% probability. If ketamine is present, the dissociative logjam applies.	ADE's drug supply is among the highest MDMA purity in the world — the Netherlands harm reduction system tests extensively. But the Ethiopian diaspora attendee with CYP2D6 ultra-rapid metabolism is experiencing a shorter peak, a faster offset, and a pharmacokinetically driven urge to redose that the harm reduction team at the venue may interpret as problematic behaviour rather than a genomic pharmacokinetics reality. The redosing that produces MDMA neurotoxicity is not always a poor decision. Sometimes it is a pharmacokinetic reality that the genome creates and the drug supply provides no accommodation for. 'Know your code before the night opens' — an Ethiopian diaspora MDMA user at ADE should know their CYP2D6 ultra-rapid status. It changes the entire calculation.

Scenario 4 — The Northern European at Club Space Miami

The genomic profile they carry	What Miami's sunrise drug supply meets
CYP2D6 Poor Metabolizer: 7–10% probability — the highest rate of any major population. MDMA accumulates. The second hit does not produce the same	Club Space's sunrise sessions involve MDMA redosing as the standard pattern — multiple doses across a 12+ hour session. For the CYP2D6 poor metabolizer Northern

effect as the first — it produces plasma concentration 2–3x higher. MTHFR A1298C: intermediate Northern European rates.	European tourist: the redosing that Ibiza or Miami's culture normalises is pharmacokinetically dangerous specifically for their genome. Each dose accumulates on the last. By dose three, plasma MDMA concentration is not triple — it is potentially 5–8x the intended single-dose level. 'Before the afters. Before the sunrise.' — the sunrise is when the Northern European poor metabolizer is most at risk. Hours of accumulation behind them. More doses potentially ahead. 'Know your code' means knowing whether you are in the 1-in-10 who should treat Miami's afterparty pattern as a specific personal pharmacokinetic risk.

Part IV — The Traveler's Quick-Check Protocol

THE CENTURION — Before the Festival: Three Questions That Change Everything

This protocol is for the person who already knows the Recovery Kernel framework and is traveling to a festival in one of the city edition markets. It takes ten minutes. It changes the pharmacological risk profile of the entire night.

Question 1	Question 2	Question 3
What is my ancestral background, and what does that tell me about my likely genomic vulnerabilities?	**What are the primary substances in the drug supply of this specific city and venue?**	**Which of my genetic variants intersect with those specific substances?**
East Asian → ALDH2 check, SLC6A4 check, OPRM1 check. Mediterranean/Latino → MTHFR check. Northern European → CYP2D6 check. MENA → CYP2D6 ultra-rapid check, G6PD check. African descent → CYP2B6 check, G6PD check.	Berlin/London → MDMA + ketamine. Ibiza → MDMA + cocaine + GHB + ketamine in heat. Miami → MDMA sunrise redosing. Bogotá/Medellín → cocaine + altitude. Tel Aviv → GHB + meth + mephedrone chemsex profile.	MDMA + CYP2D6 poor metabolizer = accumulation risk → reduce dose, extend intervals. MDMA + CYP2D6 ultra-rapid = redosing drive → track timing, not effect. Cocaine + MTHFR + altitude = triple cardiovascular burden → cardiac monitoring. GHB + GABRA2 high-risk = timing error lethality → fixed intervals, never redose.

The Pocket Reference — Your Ancestry and Your Primary Festival Risk

Your ancestry	Your primary genetic risk	Most dangerous festival substance for your genome	Recovery Kernel edition that addresses you
East Asian	ALDH2 *2 (30–50%), SLC6A4 short/short (70–80%), OPRM1 G allele (30–50%)	Alcohol + MDMA combination in heat. Any fentanyl-contaminated supply.	Currently unaddressed — this is the primary gap in the global collection.
South Asian	CYP2C19 poor	Benzodiazepines at	Currently

	metabolizer (20–30% — highest globally), G6PD	standard doses. Poppers.	unaddressed — second significant gap.
Mediterranean / Southern European / Italian	MTHFR C677T homozygous (10–20%), G6PD (5–15%)	Any serotonin-flooding substance (MDMA, cocaine) in the context of impaired methylation recovery. Poppers.	IBIZA — 'Before the Myths'; PARIS — 'ADN d'abord'
Northern / Central European	CYP2D6 poor metabolizer (7–10% — highest globally)	MDMA and codeine at standard doses — accumulation to 2–3x effective concentration.	BERLIN — 'No shame'; LONDON — 'Underground Genome'; NETHERLANDS — 'Know your code'
East African / Ethiopian	CYP2D6 ultra-rapid (26–29% — highest globally), CYP2B6 *6 carrier (30–35%)	Codeine toxicity. MDMA redosing pharmacokinetic drive. Ketamine logjam.	Partially addressed by GLOBAL edition. No dedicated edition.
West / Sub-Saharan African	CYP2B6 *6 high carrier (30–35%), G6PD deficiency (10–25%)	Ketamine (logjam), PCP, dissociatives. Poppers.	Partially addressed by GLOBAL edition. No dedicated edition.
North African / Middle Eastern / Arab	CYP2D6 ultra-rapid (8–15%), G6PD (5–15%), MTHFR C677T	MDMA redosing drive. Poppers. Codeine toxicity.	TEL AVIV — 'Clear Signal'
Hispanic / Latino	MTHFR C677T homozygous (10–22% — among highest globally), altitude pharmacokinetics	Cocaine at altitude. Any substance in a methylation-impaired system.	BOGOTÁ — 'High Altitude'; MEDELLÍN — 'The Night Moves Fast'; MIAMI — 'Sunrise Protocol'
Eastern European / Slavic / Georgian	MTHFR C677T (8–14%), CYP2B6 intermediate, NPS market exposure	Synthetic cathinones (NPS) in impaired metabolizer. Ketamine. MDMA.	BERLIN · WARSAW · BELGRADE · TBILISI · ALBANIA · RUSSIA

The Map Is the Message

THE CENTURION — Every City Edition Is a Scientific Claim. Every Tagline Is a Pharmacological Signal.

The Recovery Kernel global t-shirt collection is not merchandise with a social message. It is a scientific communication system designed as fashion — because fashion is the only medium that reaches the specific population at the specific moment when the genomic information is most consequential: at the festival, at the venue, at the moment before the pill is taken.

The world map encoded in the collection is a pharmacogenomic map. Berlin is not on that map because Berghain is famous. It is on the map because Northern European CYP2D6 poor metabolizer rates — the highest in the world — encounter MDMA at the highest intensity nightlife environment in the world. Bogotá is on the map because the world's highest MTHFR C677T homozygous rates encounter the world's most abundant cocaine supply at 2,600m altitude. Tbilisi is on the map because a population with CYP2D6 intermediate enrichment has already been raided for the harm reduction practices that the city's legal system criminalized and that the Recovery Kernel's framework addresses directly.

The gaps in the current collection — no dedicated East Asian edition, no South Asian edition — are the next targets. The East Asian tourist at Ibiza is the single most underserved genomic profile in the global nightlife harm reduction landscape. 70–80% SLC6A4 short/short + MDMA + Ibiza heat is a pharmacological scenario that no existing harm reduction infrastructure has calibrated for. The Recovery Kernel's geographic map is not complete. It is accurate about what it covers. It is honest about what it does not yet cover.

The compendium's statement stands as the foundation of everything: 'Mediterranean, Hispanic, or Italian descent — MTHFR more common in these populations.' One sentence. Sixteen global editions built on it. A world map of pharmacogenomic risk, worn by the people it speaks about, at the places where it matters most.

DNA FIRST. PARTY SECOND. KNOW YOUR CODE.

One code. Every body. Every night. Every city.

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